

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A printing plate material comprising a substrate on the surface of which a coat layer ~~containing~~ comprising a titanium oxide photocatalyst and at least one ~~member selected from the group consisting of a group VIB metal selected from the group consisting of~~ which is W, Mo, and Cr, or a group IVA metal selected from the group consisting of Ge, Sn, and Pb, or an oxide of the group VIB or IVA metal, is formed directly or with an intermediate layer intervening between the substrate and the coat layer.

Claims 2-7 (Cancelled).

Claim 8 (Previously Presented): The printing plate material as claimed in claim 1, wherein the surface of said coat layer has hydrophobicity in terms of a water contact angle of at least 50° in its initial state.

Claim 9 (Previously Presented): The printing plate material as claimed in claim 1, wherein the surface of said coat layer is convertible to a hydrophilic surface having a water contact angle of 10° or less by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

Claim 10 (Previously Presented): The printing plate material as claimed in claim 1, wherein the surface of said coat layer has hydrophobicity in terms of a water contact angle of at least 50° in its initial state and is convertible to a hydrophilic surface having a water contact angle of 10° or less by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

Claim 11 (Original): The printing plate material as claimed in claim 10, wherein the hydrophilic surface serves as a non-printing image portion and the remaining hydrophobic surface serves as a printing image portion.

Claim 12 (Previously Presented): The printing plate material as claimed in claim 10, which requires an energy of 0.005 to 2 J/cm<sup>2</sup> for converting the hydrophobicity of the surface of the coat layer to hydrophilicity, and on which an image can be directly formed based on digital data.

Claim 13 (Previously Presented): The printing plate material as claimed in claim 1, wherein at least a portion of the surface of said coat layer is convertible to a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by irradiation with a flux of energy thereon.

Claim 14 (Previously Presented): The printing plate material as claimed in claim 1, wherein at least a portion of the surface of the coat layer is convertible to a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by a chemical conversion treatment thereon.

Claim 15 (Previously Presented): The printing plate material as claimed in claim 1, wherein at least a portion of the surface of the coat layer is convertible to a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by irradiation with a flux of energy thereon and by a chemical conversion treatment thereon.

Claim 16 (Previously Presented): The printing plate material as claimed in claim 1, wherein said coat layer has a surface at least a part of which forms a part reconvertible to a hydrophilic surface by irradiation with light having a wavelength at an energy level higher than a band gap energy of the titanium oxide catalyst and a hydrophobic part which is not irradiated with the light,

where the surface of the coat layer when subjected to light irradiation thereon and an electrochemical treatment thereon is hydrophobic.

Claim 17 (Original): The printing plate material as claimed in claim 16, wherein the surface of said coat layer has hydrophobicity in terms of a water contact angle of at least 50° in its initial state.

Claim 18 (Previously Presented): The printing plate material as claimed in claim 16, wherein the surface of said coat layer is convertible to a hydrophilic surface having a water contact angle of 10° or less by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

Claim 19 (Previously Presented): The printing plate material as claimed in claim 16, wherein the surface of said coat layer has hydrophobicity in terms of a water contact angle of at least 50° in its initial state and is convertible to a hydrophilic surface having a water contact angle of 10° or less by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

Claim 20 (Original): The printing plate material as claimed in claim 19, wherein the hydrophilic surface serves as a non-printing image portion and the remaining hydrophobic surface serves as a printing image portion.

Claim 21 (Previously Presented): The printing plate material as claimed in claim 16 wherein at least a portion of the surface of said coat layer is a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by light irradiation thereon and an electrochemical treatment thereon.

Claim 22 (Previously Presented): The printing plate material as claimed in claim 1, wherein at least a portion of the surface of said coat layer is a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by cleaning the surface and renewing the surface of the coat layer containing the titanium oxide catalyst to renew the catalyst.

Claim 23 (Original): The printing plate material as claimed in claim 22, wherein the cleaning is polishing cleaning.

Claim 24 (Previously Presented): The printing plate material as claimed in claim 1, which further comprises on said coat layer a coating layer comprising a compound which can be decomposed by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

Claim 25 (Cancelled).

Claim 26 (Previously Presented): The printing plate material as claimed in claim 24, wherein said at least one member selected from the group consisting of  $\text{Fe}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Cr}^{3+}$ , and  $\text{Cu}^{2+}$  is contained as an oxide.

Claim 27 (Previously Presented): The printing plate material as claimed in claim 26, wherein the oxide is a compound oxide with titanium.

Claims 28-30 (Cancelled).

Claim 31 (Currently Amended): The printing plate material as claimed in claim 24, wherein the surface of said ~~coat~~ coating layer has hydrophobicity in terms of a water contact angle of at least  $50^\circ$  in its initial state.

Claim 32 (Previously Presented): The printing plate material as claimed in claim 24, wherein the surface of said coat layer is exposable and is convertible to a hydrophilic surface having a water contact angle of  $10^\circ$  or less by irradiation with the light.

Claim 33 (Previously Presented): The printing plate material as claimed in claim 24, wherein the surface of said coat layer has hydrophobicity in terms of a water contact angle of at least  $50^\circ$  in its initial state and is convertible to a hydrophilic surface having a water contact angle of  $10^\circ$  or less by irradiation with the light.

Claim 34 (Previously Presented): The printing plate material as claimed in claim 33, wherein the hydrophilic surface serves as a non-printing image portion and a hydrophobic surface of the coating layer serves as a printing image portion.

Claim 35 (Previously Presented): The printing plate material as claimed in claim 1, wherein at least a portion of the surface of said coat layer is convertible to a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° with a compound having an organic hydrophobic group in its molecule.

Claim 36 (Original): The printing plate material as claimed in claim 35, wherein said compound having an organic hydrophobic group in its molecule is decomposable by a titanium oxide photocatalytic action under irradiation with light having an energy higher than a band gap energy of the titanium oxide photocatalyst.

Claim 37 (Previously Presented): The printing plate material as claimed in claim 35, wherein said compound having an organic hydrophobic group in its molecule is a fatty acid dextrin.

Claim 38 (Previously Presented): The printing plate material as claimed in claim 35, wherein said compound having an organic hydrophobic group in its molecule is an organic titanium compound.

Claim 39 (Previously Presented): The printing plate material as claimed in claim 35, wherein said compound having an organic hydrophobic group in its molecule is an organic silane compound.

Claim 40 (Currently Amended): The printing plate material as claimed in claim 1, which can be repeatedly used by repeating the steps of:

preparing a printing plate in which at a latent image, which comprises a hydrophobic portion which is not irradiated with light and a portion which is irradiated with light to be changed to a hydrophilic surface, is formed by irradiating the printing plate material with light having an energy higher than a band gap energy of the titanium oxide photocatalyst, and renewing the printing plate material by bringing at least the hydrophilic portion on the surface of the plate material into contact with a compound having an organic hydrophobic group in its molecule after removing an ink from the surface of the printing plate material after completion of printing.

Claim 41 (Cancelled).

Claim 42 (Previously Presented): A method for renewing a printing plate material as claimed in claim 1, the method comprising the steps of:

cleaning a surface of the coat layer containing the titanium oxide photocatalyst after completion of printing; and

then renewing the coat layer containing a titanium oxide photocatalyst.

Claim 43 (Previously Presented): A method for renewing a printing plate material as in the printing plate material of claim 1, the method comprising the steps of:

cleaning a surface of the coat layer containing the titanium oxide photocatalyst after completion of printing; and

then renewing the coat layer containing a titanium oxide photocatalyst by irradiation with a flux of energy thereon.

Claim 44 (Previously Presented): A method for renewing a printing plate material as in the printing plate material of claim 1, the method comprising the steps of:

cleaning a surface of the coat layer containing the titanium oxide photocatalyst after completion of printing; and

then renewing the coat layer containing a titanium oxide photocatalyst by a chemical conversion treatment thereon.

Claim 45 (Previously Presented): A method for renewing a printing plate material as in the printing plate material of claim 1, the method comprising the steps of:

cleaning a surface of the coat layer containing the titanium oxide photocatalyst after completion of printing; and

then renewing the coat layer containing a titanium oxide photocatalyst by irradiation with a flux of energy thereon and a chemical conversion treatment thereon in combination.

Claim 46 (Previously Presented): A method for renewing a printing plate material as in the printing plate material of claim 16, the method comprising at least the steps of:

cleaning a surface of the coat layer containing the titanium oxide photocatalyst after completion of printing; and

then renewing the coat layer containing a titanium oxide photocatalyst by light irradiation thereon and an electrochemical treatment thereon.

Claim 47 (Previously Presented): The method for renewing a printing plate material as claimed in claim 42, wherein the step of cleaning the surface of the coat layer and the step of renewing the coat layer are performed in a printing machine.



Claim 48 (Original): A method for renewing a printing plate material as in the printing plate material of claim 24, the method comprising at least the steps of:

cleaning an outermost surface of the printing plate material including a surface of the coat layer which surface is hydrophilic in at least a portion thereof after completion of printing; and

then renewing the coating layer to cause a hydrophobic surface having a water contact angle of 50° or more to emerge.

Claim 49 (Original): The method for printing plate material as claimed in claim 48, wherein the step of cleaning the outermost surface and the step of renewing the coating layer are performed in a printing machine.

Claim 50 (Previously Presented): A method for preparing and renewing a printing plate material, the method comprising the steps, which are performed in a printing machine, of preparing a printing plate by irradiation of a surface of a coat layer of a printing plate material as claimed in claim 1 with light having a wavelength having an energy higher than a band gap energy of the titanium oxide photocatalyst,

cleaning the surface of the coat layer, and  
renewing the coat layer.

Claim 51 (Currently Amended): A method for preparing and renewing a printing plate material, the method of comprising the steps, which are performed in a printing machine, of preparing a printing plate by irradiation of a surface of a coat layer of a printing plate material as claimed in claim 24 with light having a wavelength having an energy higher

than a band gap energy of titanium oxide photocatalyst to cause the above described surface of the coat layer in the irradiated region to emerge,

cleaning the outermost surface including the surface of the coat layer which has emerged, and

renewing the coating layer.

Claims 52-88 (Cancelled).

Claim 89 (Currently Amended): A printing plate material comprising a substrate on the surface of which a coat layer ~~containing~~ comprising a titanium oxide photocatalyst and at least one member selected from the group consisting of  $\text{Mn}^{2+}$ ,  $\text{Cr}^{3+}$  and  $\text{Cu}^{2+}$  in the form of an ion or an oxide is formed directly or with an intermediate layer intervening between the substrate and the coat layer.